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Generate Collection

Search Results - Record(s) 1 through 5 of 5 returned.☐ 1. Document ID: US 6265212 B1

L6: Entry 1 of 5

File: USPT

Jul 24, 2001

US-PAT-NO: 6265212

DOCUMENT-IDENTIFIER: US 6265212 B1

TITLE: Packaging systems for human recombinant adenovirus to be used in gene therapy

DATE-ISSUED: July 24, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fallaux; Frits J.	Leiderdorp	N/A	N/A	NLX
Hoeben; Robert C.	Leiden	N/A	N/A	NLX
Bout; Abraham	Moerkapelle	N/A	N/A	NLX
Valerio; Domenico	Leiden	N/A	N/A	NLX
van der Eb; Alex J.	Oegstgeest	N/A	N/A	NLX
Schouten; Govert	Leiden	N/A	N/A	NLX

US-CL-CURRENT: 435/320.1; 424/93.21, 435/235.1, 435/325, 435/69.1, 536/23.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 2. Document ID: US 6117680 A

L6: Entry 2 of 5

File: USPT

Sep 12, 2000

US-PAT-NO: 6117680

DOCUMENT-IDENTIFIER: US 6117680 A

TITLE: Compositions and methods for regulation of transcription

DATE-ISSUED: September 12, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Natesan; Sridaran	Chestnut Hill	MA	N/A	N/A
Gilman; Michael Z.	Newton	MA	N/A	N/A

US-CL-CURRENT: 435/455; 435/235.1, 435/320.1, 435/325, 435/456, 536/23.4

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 3. Document ID: US 5962311 A

L6: Entry 3 of 5

File: USPT

Oct 5, 1999

DOCUMENT-IDENTIFIER: US 5962311 A

TITLE: Short-shafted adenoviral fiber and its use

DATE-ISSUED: October 5, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Roelvink; Petrus W.	Olney	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A

US-CL-CURRENT: 435/320.1; 435/235.1, 435/69.7

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWIC	Draw Desc	Image
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☐ 4. Document ID: US 5846782 A

L6: Entry 4 of 5

File: USPT

Dec 8, 1998

US-PAT-NO: 5846782

DOCUMENT-IDENTIFIER: US 5846782 A

TITLE: Targeting adenovirus with use of constrained peptide motifs

DATE-ISSUED: December 8, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Roelvink; Petrus W.	Olney	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A

US-CL-CURRENT: 435/69.7; 530/350

Full	Title	Citation	Front	Review	Classification	Date	Reference	KWIC	Draw Desc	Image
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☐ 5. Document ID: US 5712136 A

L6: Entry 5 of 5

File: USPT

Jan 27, 1998

US-PAT-NO: 5712136

DOCUMENT-IDENTIFIER: US 5712136 A

TITLE: Adenoviral-mediated cell targeting commanded by the adenovirus penton base protein

DATE-ISSUED: January 27, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A
Roelvink; Petrus W.	Gaithersburg	MD	N/A	N/A
Brough; Douglas E.	Otney	MD	N/A	N/A
McVey; Duncan L.	Derwood	MD	N/A	N/A
Bruder; Joseph T.	Frederick	MD	N/A	N/A

US-CL-CURRENT: 435/456; 435/235.1, 435/320.1, 530/350

Generate Collection

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Display 20 Documents, starting with Document: 5

Display Format: Change Format

WEST

Generate Collection

Search Results - Record(s) 1 through 12 of 12 returned.☒ 1. Document ID: US 6287857 B1

L7: Entry 1 of 12

File: USPT

Sep 11, 2001

US-PAT-NO: 6287857

DOCUMENT-IDENTIFIER: US 6287857 B1

TITLE: Nucleic acid delivery vehicles

DATE-ISSUED: September 11, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
O'Riordan; Catherine R.	Boston	MA	N/A	N/A
Wadsworth; Samuel C.	Shrewsbury	MA	N/A	N/A

US-CL-CURRENT: 435/320.1; 536/23.1, 536/24.2

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KWIC	Draw Desc	Image
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☐ 2. Document ID: US 6265212 B1

L7: Entry 2 of 12

File: USPT

Jul 24, 2001

US-PAT-NO: 6265212

DOCUMENT-IDENTIFIER: US 6265212 B1

TITLE: Packaging systems for human recombinant adenovirus to be used in gene therapy

DATE-ISSUED: July 24, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fallaux; Frits J.	Leiderdorp	N/A	N/A	NLX
Hoeben; Robert C.	Leiden	N/A	N/A	NLX
Bout; Abraham	Moerkapelle	N/A	N/A	NLX
Valerio; Domenico	Leiden	N/A	N/A	NLX
van der Eb; Alex J.	Oegstgeest	N/A	N/A	NLX
Schouten; Govert	Leiden	N/A	N/A	NLX

US-CL-CURRENT: 435/320.1; 424/93.21, 435/235.1, 435/325, 435/69.1, 536/23.1

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KWIC	Draw Desc	Image
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☐ 3. Document ID: US 6117680 A

L7: Entry 3 of 12

File: USPT

Sep 12, 2000

DOCUMENT-IDENTIFIER: US 6117680 A

TITLE: Compositions and methods for regulation of transcription

DATE-ISSUED: September 12, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Natesan; Sridaran	Chestnut Hill	MA	N/A	N/A
Gilman; Michael Z.	Newton	MA	N/A	N/A

US-CL-CURRENT: 435/455; 435/235.1, 435/320.1, 435/325, 435/456, 536/23.4

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KWIC	Draw Desc	Image
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☒ 4. Document ID: US 6057155 A

L7: Entry 4 of 12

File: USPT

May 2, 2000

US-PAT-NO: 6057155

DOCUMENT-IDENTIFIER: US 6057155 A

TITLE: Targeting adenovirus with use of constrained peptide motifs

DATE-ISSUED: May 2, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Roelvink; Petrus W.	Olney	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A

US-CL-CURRENT: 435/325; 435/320.1, 435/69.1, 536/23.4, 536/23.72

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KWIC	Draw Desc	Image
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☐ 5. Document ID: US 6054312 A

L7: Entry 5 of 12

File: USPT

Apr 25, 2000

US-PAT-NO: 6054312

DOCUMENT-IDENTIFIER: US 6054312 A

TITLE: Receptor-mediated gene delivery using bacteriophage vectors

DATE-ISSUED: April 25, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Larocca; David	Encinitas	CA	N/A	N/A
Baird; Andrew	San Diego	CA	N/A	N/A
Johnson; Wendy	Encinitas	CA	N/A	N/A

US-CL-CURRENT: 435/320.1; 530/350, 530/387.1, 536/23.5, 536/23.72

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KWIC	Draw Desc	Image
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L7: Entry 6 of 12

File: USPT

Dec 21, 1999

US-PAT-NO: 6004798

DOCUMENT-IDENTIFIER: US 6004798 A

TITLE: Retroviral envelopes having modified hypervariable polyproline regions

DATE-ISSUED: December 21, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anderson; W. French	San Marino	CA	N/A	N/A
Wu; Bonnie Weimin	Pasadena	CA	N/A	N/A

US-CL-CURRENT: 435/235.1; 435/320.1, 536/23.1

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KWIC	Draw Desc	Image
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☐ 7. Document ID: US 5998205 A

L7: Entry 7 of 12

File: USPT

Dec 7, 1999

US-PAT-NO: 5998205

DOCUMENT-IDENTIFIER: US 5998205 A

TITLE: Vectors for tissue-specific replication

DATE-ISSUED: December 7, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hallenbeck; Paul L.	Gaithersburg	MD	N/A	N/A
Chang; Yung-Nien	Cockeysville	MD	N/A	N/A
Chiang; Yawen L.	Potomac	MD	N/A	N/A

US-CL-CURRENT: 435/325; 424/93.21, 435/320.1, 435/455, 435/69.1, 514/44, 536/23.1

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KWIC	Draw Desc	Image
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☒ 8. Document ID: US 5962311 A

L7: Entry 8 of 12

File: USPT

Oct 5, 1999

US-PAT-NO: 5962311

DOCUMENT-IDENTIFIER: US 5962311 A

TITLE: Short-shafted adenoviral fiber and its use

DATE-ISSUED: October 5, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Roelvink; Petrus W.	Olney	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A

US-CL-CURRENT: 435/320.1; 435/235.1, 435/69.7

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KWIC	Draw Desc	Image
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☐ 9. Document ID: US 5912141 A

L7: Entry 9 of 12

File: USPT

Jun 15, 1999

US-PAT-NO: 5912141

DOCUMENT-IDENTIFIER: US 5912141 A

TITLE: Nucleic acids encoding tumor virus susceptibility genes

DATE-ISSUED: June 15, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Brojatsch; Jurgen	Jamaica Pond	MA	N/A	N/A
Naughton; John	Somerville	MA	N/A	N/A
Young; John A. T.	Auburndale	MA	N/A	N/A

US-CL-CURRENT: 435/69.1; 435/252.3, 435/254.11, 435/320.1, 435/325, 435/69.7, 530/300,
530/350, 530/826, 536/23.1, 536/23.4, 536/23.5

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KMOC	Draw Desc	Image
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☒ 10. Document ID: US 5846782 A

L7: Entry 10 of 12

File: USPT

Dec 8, 1998

US-PAT-NO: 5846782

DOCUMENT-IDENTIFIER: US 5846782 A

TITLE: Targeting adenovirus with use of constrained peptide motifs

DATE-ISSUED: December 8, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Roelvink; Petrus W.	Olney	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A

US-CL-CURRENT: 435/69.7; 530/350

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KMOC	Draw Desc	Image
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☐ 11. Document ID: US 5712136 A

L7: Entry 11 of 12

File: USPT

Jan 27, 1998

DOCUMENT-IDENTIFIER: US 5712136 A

• TITLE: Adenoviral-mediated cell targeting commanded by the adenovirus penton base protein

DATE-ISSUED: January 27, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A
Roelvink; Petrus W.	Gaithersburg	MD	N/A	N/A
Brough; Douglas E.	Otney	MD	N/A	N/A
McVey; Duncan L.	Derwood	MD	N/A	N/A
Bruder; Joseph T.	Frederick	MD	N/A	N/A

US-CL-CURRENT: 435/456; 435/235.1, 435/320.1, 530/350

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KMIC	Draw Desc	Image
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☐ 12. Document ID: US 5681746 A

L7: Entry 12 of 12

File: USPT

Oct 28, 1997

US-PAT-NO: 5681746

DOCUMENT-IDENTIFIER: US 5681746 A

TITLE: Retroviral delivery of full length factor VIII

DATE-ISSUED: October 28, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bodner; Mordechai	San Diego	CA	N/A	N/A
De Polo; Nicholas J.	Solana Beach	CA	N/A	N/A
Chang; Stephen	Poway	CA	N/A	N/A
Hsu; David Chi-Tang	San Diego	CA	N/A	N/A
Respass; James G.	San Diego	CA	N/A	N/A

US-CL-CURRENT: 435/350; 435/320.1, 435/366, 435/371, 536/23.5

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KMIC	Draw Desc	Image
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Search Results - Record(s) 1 through 16 of 16 returned.☐ 1. Document ID: US 6287857 B1

L8: Entry 1 of 16

File: USPT

Sep 11, 2001

US-PAT-NO: 6287857

DOCUMENT-IDENTIFIER: US 6287857 B1

TITLE: Nucleic acid delivery vehicles

DATE-ISSUED: September 11, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
O'Riordan; Catherine R.	Boston	MA	N/A	N/A
Wadsworth; Samuel C.	Shrewsbury	MA	N/A	N/A

US-CL-CURRENT: 435/320.1; 536/23.1, 536/24.2

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KWIC	Draw Desc	Image
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☐ 2. Document ID: US 6265212 B1

L8: Entry 2 of 16

File: USPT

Jul 24, 2001

US-PAT-NO: 6265212

DOCUMENT-IDENTIFIER: US 6265212 B1

TITLE: Packaging systems for human recombinant adenovirus to be used in gene therapy

DATE-ISSUED: July 24, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fallaux; Frits J.	Leiderdorp	N/A	N/A	NLX
Hoeben; Robert C.	Leiden	N/A	N/A	NLX
Bout; Abraham	Moerkapelle	N/A	N/A	NLX
Valerio; Domenico	Leiden	N/A	N/A	NLX
van der Eb; Alex J.	Oegstgeest	N/A	N/A	NLX
Schouten; Govert	Leiden	N/A	N/A	NLX

US-CL-CURRENT: 435/320.1; 424/93.21, 435/235.1, 435/325, 435/69.1, 536/23.1

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KWIC	Draw Desc	Image
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☐ 3. Document ID: US 6228844 B1

L8: Entry 3 of 16

File: USPT

May 8, 2001

DOCUMENT-IDENTIFIER: US 6228844 B1

* TITLE: Stimulating vascular growth by administration of DNA sequences encoding VEGF

DATE-ISSUED: May 8, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wolff; Jon A.	Madison	WI	N/A	N/A
Duke; David J.	Salem	OR	N/A	N/A
Felgner; Philip L.	Rancho Santa Fe	CA	N/A	N/A

US-CL-CURRENT: 514/44; 435/455

Full	Title	Citation	Front	Review	Classification	Date	Reference
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RMIC	Draw Desc	Image
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☐ 4. Document ID: US 6117680 A

L8: Entry 4 of 16

File: USPT

Sep 12, 2000

US-PAT-NO: 6117680

DOCUMENT-IDENTIFIER: US 6117680 A

TITLE: Compositions and methods for regulation of transcription

DATE-ISSUED: September 12, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Natesan; Sridaran	Chestnut Hill	MA	N/A	N/A
Gilman; Michael Z.	Newton	MA	N/A	N/A

US-CL-CURRENT: 435/455; 435/235.1, 435/320.1, 435/325, 435/456, 536/23.4

Full	Title	Citation	Front	Review	Classification	Date	Reference
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RMIC	Draw Desc	Image
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☐ 5. Document ID: US 6080575 A

L8: Entry 5 of 16

File: USPT

Jun 27, 2000

US-PAT-NO: 6080575

DOCUMENT-IDENTIFIER: US 6080575 A

TITLE: Nucleic acid construct for expressing active substances which can be activated by proteases, and preparation and use

DATE-ISSUED: June 27, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Heidtmann; Hans Heinrich	Marburg	N/A	N/A	DEX
Mueller; Rolf	Marburg	N/A	N/A	DEX
Sedlacek; Hans-Harald	Marburg	N/A	N/A	DEX

US-CL-CURRENT: 435/320.1; 435/456, 435/464, 536/23.1

Full	Title	Citation	Front	Review	Classification	Date	Reference
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RMIC	Draw Desc	Image
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☐ 6. Document ID: US 6057155 A

L8: Entry 6 of 16

File: USPT

May 2, 2000

US-PAT-NO: 6057155

DOCUMENT-IDENTIFIER: US 6057155 A

TITLE: Targeting adenovirus with use of constrained peptide motifs

DATE-ISSUED: May 2, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Roelvink; Petrus W.	Olney	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A

US-CL-CURRENT: 435/325; 435/320.1, 435/69.1, 536/23.4, 536/23.72

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KMIC	Draw Desc	Image
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☐ 7. Document ID: US 6054312 A

L8: Entry 7 of 16

File: USPT

Apr 25, 2000

US-PAT-NO: 6054312

DOCUMENT-IDENTIFIER: US 6054312 A

TITLE: Receptor-mediated gene delivery using bacteriophage vectors

DATE-ISSUED: April 25, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Larocca; David	Encinitas	CA	N/A	N/A
Baird; Andrew	San Diego	CA	N/A	N/A
Johnson; Wendy	Encinitas	CA	N/A	N/A

US-CL-CURRENT: 435/320.1; 530/350, 530/387.1, 536/23.5, 536/23.72

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KMIC	Draw Desc	Image
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☐ 8. Document ID: US 6004798 A

L8: Entry 8 of 16

File: USPT

Dec 21, 1999

US-PAT-NO: 6004798

DOCUMENT-IDENTIFIER: US 6004798 A

TITLE: Retroviral envelopes having modified hypervariable polyproline regions

DATE-ISSUED: December 21, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anderson; W. French	San Marino	CA	N/A	N/A
Wu; Bonnie Weimin	Pasadena	CA	N/A	N/A

US-CL-CURRENT: 435/235.1; 435/320.1, 536/23.1

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KMIC	Draw Desc	Image
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☐ 9. Document ID: US 5998205 A

L8: Entry 9 of 16

File: USPT

Dec 7, 1999

US-PAT-NO: 5998205

DOCUMENT-IDENTIFIER: US 5998205 A

TITLE: Vectors for tissue-specific replication

DATE-ISSUED: December 7, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hallenbeck; Paul L.	Gaithersburg	MD	N/A	N/A
Chang; Yung-Nien	Cockeysville	MD	N/A	N/A
Chiang; Yawen L.	Potomac	MD	N/A	N/A

US-CL-CURRENT: 435/325; 424/93.21, 435/320.1, 435/455, 435/69.1, 514/44, 536/23.1

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KMIC	Draw Desc	Image
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☒ 10. Document ID: US 5962311 A

L8: Entry 10 of 16

File: USPT

Oct 5, 1999

US-PAT-NO: 5962311

DOCUMENT-IDENTIFIER: US 5962311 A

TITLE: Short-shafted adenoviral fiber and its use

DATE-ISSUED: October 5, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Roelvink; Petrus W.	Olney	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A

US-CL-CURRENT: 435/320.1; 435/235.1, 435/69.7

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KMIC	Draw Desc	Image
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☒ 11. Document ID: US 5916803 A

L8: Entry 11 of 16

File: USPT

Jun 29, 1999

DOCUMENT-IDENTIFIER: US 5916803 A

* TITLE: Target cell-specific non-viral vectors for inserting genes into cells,
pharmaceutical compositions comprising such vectors and their use

DATE-ISSUED: June 29, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sedlacek; Hans-Harald	Marburg	N/A	N/A	DEX
Klenk; Hans-Dieter	Linden	N/A	N/A	DEX
Kissel; Thomas	Marburg	N/A	N/A	DEX
Muller; Rolf	Marburg	N/A	N/A	DEX

US-CL-CURRENT: 435/320.1; 435/325, 435/334, 435/371, 536/23.1

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KMOC	Draw Desc	Image
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☐ 12. Document ID: US 5912141 A

L8: Entry 12 of 16

File: USPT

Jun 15, 1999

US-PAT-NO: 5912141

DOCUMENT-IDENTIFIER: US 5912141 A

TITLE: Nucleic acids encoding tumor virus susceptibility genes

DATE-ISSUED: June 15, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Brojatsch; Jurgen	Jamaica Pond	MA	N/A	N/A
Naughton; John	Somerville	MA	N/A	N/A
Young; John A. T.	Auburndale	MA	N/A	N/A

US-CL-CURRENT: 435/69.1; 435/252.3, 435/254.11, 435/320.1, 435/325, 435/69.7, 530/300,
530/350, 530/826, 536/23.1, 536/23.4, 536/23.5

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KMOC	Draw Desc	Image
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☐ 13. Document ID: US 5846782 A

L8: Entry 13 of 16

File: USPT

Dec 8, 1998

US-PAT-NO: 5846782

DOCUMENT-IDENTIFIER: US 5846782 A

TITLE: Targeting adenovirus with use of constrained peptide motifs

DATE-ISSUED: December 8, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Roelvink; Petrus W.	Olney	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A

US-CL-CURRENT: 435/69.7; 530/350

☐ 14. Document ID: US 5712136 A

L8: Entry 14 of 16

File: USPT

Jan 27, 1998

US-PAT-NO: 5712136

DOCUMENT-IDENTIFIER: US 5712136 A

TITLE: Adenoviral-mediated cell targeting commanded by the adenovirus penton base protein

DATE-ISSUED: January 27, 1998

INVENTOR- INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wickham; Thomas J.	Potomac	MD	N/A	N/A
Kovesdi; Imre	Rockville	MD	N/A	N/A
Roelvink; Petrus W.	Gaithersburg	MD	N/A	N/A
Brough; Douglas E.	Otney	MD	N/A	N/A
McVey; Duncan L.	Derwood	MD	N/A	N/A
Bruder; Joseph T.	Frederick	MD	N/A	N/A

US-CL-CURRENT: 435/456; 435/235.1, 435/320.1, 530/350

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KMJC	Drawg Desc	Image
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☐ 15. Document ID: US 5700690 A

L8: Entry 15 of 16

File: USPT

Dec 23, 1997

US-PAT-NO: 5700690

DOCUMENT-IDENTIFIER: US 5700690 A

TITLE: Compositions and methods for inhibiting fibrogenesis

DATE-ISSUED: December 23, 1997

INVENTOR - INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Neilson; Eric G.	Rosemont	PA	N/A	N/A
Danoff; Theodore	Phila.	PA	N/A	N/A
Okada; Hirokazu	Bryn Mawr	PA	N/A	N/A
Strutz; Frank	Gottingen	N/A	N/A	DEX

US-CL-CURRENT: 435/320.1; 424/93.21, 435/325, 435/69.1, 435/91.41, 514/44, 536/23.5

Full	Title	Citation	Front	Review	Classification	Date	Reference
------	-------	----------	-------	--------	----------------	------	-----------

KMID	Draw Desc	Image
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☐ 16. Document ID: US 5681746 A

L8: Entry 16 of 16

File: USPT

Oct 28, 1997

DOCUMENT-IDENTIFIER: US 5681746 A

TITLE: Retroviral delivery of full length factor VIII

DATE-ISSUED: October 28, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bodner; Mordechai	San Diego	CA	N/A	N/A
De Polo; Nicholas J.	Solana Beach	CA	N/A	N/A
Chang; Stephen	Poway	CA	N/A	N/A
Hsu; David Chi-Tang	San Diego	CA	N/A	N/A
Respass; James G.	San Diego	CA	N/A	N/A

US-CL-CURRENT: 435/350; 435/320.1, 435/366, 435/371, 536/23.5

Full	Title	Citation	Front	Review	Classification	Date	Reference
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KWIC	Draw Desc	Image
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Generate Collection

Terms	Documents
liver and l4	16

Display

20

Documents, starting with Document:

16

Display Format:

Change Format

=> d his

(FILE 'HOME' ENTERED AT 13:42:54 ON 19 SEP 2001)

FILE 'MEDLINE, CAPLUS, BIOSIS, SCISEARCH' ENTERED AT 13:43:05 ON 19 SEP 2001

L1 4 S TROPISM(8A) (SMOOTH(W)MUSCLE(W)CELL OR SMC)
L2 37 S TROPISM(S) (SMOOTH(W)MUSCLE(W)CELL OR SMC)
L3 1480214 S VIRUS OR ADENOVIR?
L4 28 S L2 AND L3
L5 6 S LIVER AND L4
L6 4 S CAPSID AND L4
L7 3 DUP REM L6 (1 DUPLICATE REMOVED)
L8 4 DUP REM L5 (2 DUPLICATES REMOVED)

=> d bib ab 1-3 17

L7 ANSWER 1 OF 3 MEDLINE DUPLICATE 1
AN 2001498384 IN-PROCESS
DN 21431998 PubMed ID: 11545607
TI Efficient and selective aav2-mediated gene transfer directed to human
vascular endothelial cells.
AU Nicklin S A; Buening H; Dishart K L; de Alwis M; Girod A; Hacker U;
Thrasher A J; Ali R R; Hallek M; Baker A H
CS Department of Medicine and Therapeutics, University of Glasgow, Glasgow,
G11 6NT, UK.
SO MOLECULAR THERAPY, (2001 Sep) 4 (3) 174-81.
Journal code: DRT; 100890581. ISSN: 1525-0016.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 20010910
Last Updated on STN: 20010910
AB Gene therapy vectors based on adeno-associated **virus-2** (AAV2)
offer considerable promise for human gene therapy. Applications for AAV
vectors are limited to tissues efficiently transduced by the vector due
to
its natural **tropism**, which is predominantly skeletal muscle,
neurons, and hepatocytes. **Tropism** modification to elevate
efficiency and/or selectivity to individual cell types would enhance the
scope of AAV for disease therapies. The vascular endothelium is
implicitly
important in cardiovascular diseases and cancer, but is relatively poorly
transduced by AAV vectors. We therefore genetically incorporated the
peptide SIGYPLP, which targets endothelial cells (EC), into position
I-587
of AAV **capsids**. SIGYPLP-modified AAV (AAVsig) showed enhanced
transduction of human EC compared with AAV with a wild-type **capsid**
(AAVwt), a phenotype independent of heparan sulphate proteoglycan (HSPG)
binding. In contrast, AAVsig did not enhance transduction of primary
human
vascular **smooth muscle cells** or human
hepatocytes, principal targets for AAV vectors in local or systemic gene
delivery applications, respectively. Furthermore, infection of EC in the
presence of bafilomycin A(2) indicated that intracellular trafficking of
AAV particles was altered by targeting AAV by means of SIGYPLP. AAV
vectors with enhanced **tropism** for EC will be useful for diverse

gene therapeutics targeted at the vasculature.

L7 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2001 ACS
AN 2000:368622 CAPLUS
DN 133:27392
TI Chimeric **adenoviral** vectors specific for gene transfer to smooth
muscle cells, and/or endothelial cells
IN Havenga, Menzo Jans Emco; Bout, Abraham; Vogels, Ronald
PA Introgene B.V., Neth.
SO PCT Int. Appl., 91 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	WO 2000031285	A1	20000602	WO 1999-NL717	19991122
	W: AM, AZ, BA, BB, BG, BR, BY, CA, CN, CR, CU, CZ, DM, GD, GE, GH, GM, HR, HU, ID, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, MA, MD, MG, MN, MW, PL, RU, SD, SG, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	NO 9905697	A	20000522	NO 1999-5697	19991119
	EP 1020529	A2	20000719	EP 1999-203878	19991119
	EP 1020529	A3	20000816		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	AU 9959600	A1	20000525	AU 1999-59600	19991122
	JP 2000157289	A2	20000613	JP 1999-332033	19991122
PRAI	EP 1998-203921	A	19981120		

AB The invention provides chimeric **adenoviral** vectors with tissue
tropism of smooth muscle cells,
and/or endothelial cells (but not of liver cells) used for gene transfer
in gene therapy. The chimeric **adenoviral** vectors is constructed
by switching the functional part (fiber protein subunit) of
adenoviral capsid protein in **adenovirus** type 5
vector to that of a subgroup B **adenovirus**, preferably
adenovirus 16 (Ad16). The biodistribution of these chimeric
vector after i.v. tail vein injection of rats and and their display
differences in the endothelial and smooth muscle cell transduction are
detd. The infection efficiency of Ad5 vector to smooth muscle cells,
and/or endothelial cells can be increased significantly by changing the
fiber subunit (esp. shaft and knob parts) of **capsid** protein to
that of Ad16. In this way, the host immune response to recombinant
viruses derived from the chimeric **adenovirus** vectors are
greatly reduced. The contribution of cellular receptors such as CAR
(Coxsackievirus and **adenovirus** receptor) or integrin to viral
infection is also studied. Methods of prepg. various chimeric
adenovirus vectors and using them to treat diseases, preferably
cardiovascular diseases are also provided.

RE.CNT 8

RE

- (1) Armentano, D; WO 9822609 A 1998 CAPLUS
 - (2) Fallaux, F; HUM GENE THER 1998, V9, P1909 CAPLUS
 - (3) Gall, J; J VIROL 1996, V70(4), P2116 CAPLUS
 - (4) Genvec Inc; WO 9720051 A 1997 CAPLUS
 - (5) Karayan, L; WO 9833929 A 1998 CAPLUS
- ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 3 MEDLINE
 AN 1998001338 MEDLINE
 DN 98001338 PubMed ID: 9343173
 TI Increased in vitro and in vivo gene transfer by **adenovirus** vectors containing chimeric fiber proteins.
 AU Wickham T J; Tzeng E; Shears L L 2nd; Roelvink P W; Li Y; Lee G M; Brough D E; Lizonova A; Kovesdi I
 CS GenVec, Inc., Rockville, Maryland 20852, USA.
 SO JOURNAL OF VIROLOGY, (1997 Nov) 71 (11) 8221-9.
 Journal code: KCV; 0113724. ISSN: 0022-538X.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199711
 ED Entered STN: 19971224
 Last Updated on STN: 19971224
 Entered Medline: 19971113
 AB Alteration of the natural **tropism** of **adenovirus** (Ad) will permit gene transfer into specific cell types and thereby greatly broaden the scope of target diseases that can be treated by using Ad. We have constructed two Ad vectors which contain modifications to the Ad fiber coat protein that redirect **virus** binding to either alpha(v) integrin [AdZ.F(RGD)] or heparan sulfate [AdZ.F(pK7)] cellular receptors. These vectors were constructed by a novel method involving E4 rescue of an E4-deficient Ad with a transfer vector containing both the
 E4 region and the modified fiber gene. AdZ.F(RGD) increased gene delivery to endothelial and **smooth muscle cells** expressing alpha(v) integrins. Likewise, AdZ.F(pK7) increased
 transduction
 5- to 500-fold in multiple cell types lacking high levels of Ad fiber receptor, including macrophage, endothelial, smooth muscle, fibroblast, and T cells. In addition, AdZ.F(pK7) significantly increased gene
 transfer
 in vivo to vascular **smooth muscle cells** of the porcine iliac artery following balloon angioplasty. These vectors may therefore be useful in gene therapy for vascular restenosis or for targeting endothelial cells in tumors. Although binding to the fiber receptor still occurs with these vectors, they demonstrate the
 feasibility
 of tissue-specific receptor targeting in cells which express low levels
 of
 Ad fiber receptor.

=> d bib ab 1-4 18

L8 ANSWER 1 OF 4 SCISEARCH COPYRIGHT 2001 ISI (R)
 AN 2001:713850 SCISEARCH
 GA The Genuine Article (R) Number: 468DX
 TI Efficient and selective AAV2-mediated gene transfer directed to human vascular endothelial cells
 AU Nicklin S A; Buening H; Dishart K L; de Alwis M; Girod A; Hacker U; Thrasher A J; Ali R R; Hallek M; Baker A H (Reprint)
 CS Univ Glasgow, Dept Med & Therapeut, Glasgow G11 6NT, Lanark, Scotland (Reprint); Univ Munich, Genzentrum, Mol Biol Lab, D-81377 Munich, Germany;

Univ Coll London, Inst Child Hlth, London, England

CYA Scotland; Germany; England

SO MOLECULAR THERAPY, (SEP 2001) Vol. 4, No. 3, pp. 174-181.
 Publisher: ACADEMIC PRESS INC, 525 B ST, STE 1900, SAN DIEGO, CA
 92101-4495 USA.
 ISSN: 1525-0016.

DT Article; Journal

LA English

REC Reference Count: 50
 ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Gene therapy vectors based on adeno-associated **virus-2** (AAV2)
 offer considerable promise for human gene therapy. Applications for AAV
 vectors are limited to tissues efficiently transduced by the vector due
 to
 its natural **tropism**, which is predominantly skeletal muscle,
 neurons, and hepatocytes. **Tropism** modification to elevate
 efficiency and/or selectivity to individual cell types would enhance the
 scope of AAV for disease therapies. The vascular endothelium is
 implicitly
 important in cardiovascular diseases and cancer, but is relatively poorly
 transduced by AAV vectors. We therefore genetically incorporated the
 peptide SIGYPLP, which targets endothelial cells (EC), into position
 I-587
 of AAV capsids. SIGYPLP-modified AAV (AAVsig) showed enhanced
 transduction
 of human EC compared with AAV with a wild-type capsid (AAVwt), a
 phenotype
 independent of heparan sulphate proteoglycan (HSPG) binding. In contrast,
 AAVsig did not enhance transduction of primary human vascular
smooth muscle cells or human hepatocytes,
 principal targets for AAV vectors in local or systemic gene delivery
 applications, respectively. Furthermore, infection of EC in the presence
 of bafilomycin A(2) indicated that intracellular trafficking of AAV
 particles was altered by targeting AAV by means of SIGYPLP. AAV vectors
 with enhanced **tropism** for EC will be useful for diverse gene
 therapeutics targeted at the vasculature.

L8 ANSWER 2 OF 4 MEDLINE DUPLICATE 1

AN 2001414373 MEDLINE

DN 21356643 PubMed ID: 11463761

TI Analysis of cell-specific promoters for viral gene therapy targeted at
 the
 vascular endothelium.

AU Nicklin S A; Reynolds P N; Brosnan M J; White S J; Curiel D T; Dominiczak
 A F; Baker A H

CS Department of Medicine and Therapeutics, University of Glasgow, Western
 Infirmary, Glasgow, United Kingdom.

SO HYPERTENSION, (2001 Jul) 38 (1) 65-70.
 Journal code: GK7; 7906255. ISSN: 1524-4563.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Priority Journals

EM 200108

ED Entered STN: 20010813
 Last Updated on STN: 20010813
 Entered Medline: 20010809

AB The use of viral vectors for vascular gene therapy targeted at the
 endothelium is limited by the promiscuous **tropism** of vectors and

nonspecificity of viral promoters, resulting in high-level transgene expression in multiple tissues. To evaluate suitable endothelial cell (EC)-specific promoters for vascular gene therapy, we directly compared the ability of the fms-like tyrosine kinase-1 (FLT-1), intercellular adhesion molecule-2 (ICAM-2), and von Willebrand factor (vWF) promoters to drive EC-restricted transcription after cloning into **adenoviral** vectors upstream of lacZ. Vastly different expression profiles were observed. Whereas both FLT-1 and ICAM-2 promoters generated transgene expression levels similar to cytomegalovirus in ECs in vitro, vWF expression levels were extremely low. Analysis of non-EC types revealed that ICAM-2 but not FLT-1 evoked leaky transgene expression, thus identifying FLT-1 as the most selective promoter. With an ex vivo human gene therapy model, the FLT-1 promoter demonstrated EC-specific transgene expression in intact human vein but no detectable expression from infected exposed **smooth muscle cells** in EC-denuded vein. Furthermore, when **adenoviruses** were systemically administered to mice, the FLT-1 promoter demonstrated extremely low-level gene expression in the **liver**, the major target organ for **adenoviral** transduction in vivo. This study highlights the potential of using the FLT-1 promoter for local and systemic human gene therapy in hypertension and its complications.

L8 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2001 ACS

AN 2000:368622 CAPLUS

DN 133:27392

TI Chimeric **adenoviral** vectors specific for gene transfer to smooth muscle cells, and/or endothelial cells

IN Havenga, Menzo Jans Emco; Bout, Abraham; Vogels, Ronald

PA Introgene B.V., Neth.

SO PCT Int. Appl., 91 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000031285	A1	20000602	WO 1999-NL717	19991122
	W: AM, AZ, BA, BB, BG, BR, BY, CA, CN, CR, CU, CZ, DM, GD, GE, GH, GM, HR, HU, ID, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, MA, MD, MG, MN, MW, PL, RU, SD, SG, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	NO 9905697	A	20000522	NO 1999-5697	19991119
	EP 1020529	A2	20000719	EP 1999-203878	19991119
	EP 1020529	A3	20000816		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	AU 9959600	A1	20000525	AU 1999-59600	19991122
	JP 2000157289	A2	20000613	JP 1999-332033	19991122
PRAI	EP 1998-203921	A	19981120		

AB The invention provides chimeric **adenoviral** vectors with tissue **tropism** of **smooth muscle cells**, and/or endothelial cells (but not of **liver** cells) used for gene transfer in gene therapy. The chimeric **adenoviral** vectors is constructed by switching the functional part (fiber protein subunit) of **adenoviral** capsid protein in **adenovirus** type 5 vector to

that of a subgroup B **adenovirus**, preferably **adenovirus** 16 (Ad16). The biodistribution of these chimeric vector after i.v. tail vein injection of rats and and their display differences in the endothelial and smooth muscle cell transduction are detd. The infection efficiency of Ad5 vector to smooth muscle cells, and/or endothelial cells can be increased significantly by changing the fiber subunit (esp. shaft and knob parts) of capsid protein to that of Ad16. In this way, the host immune response to recombinant **viruses** derived from the chimeric **adenovirus** vectors are greatly reduced. The contribution of cellular receptors such as CAR (Coxsackievirus and **adenovirus** receptor) or integrin to viral infection is also studied. Methods of prepg. various chimeric **adenovirus** vectors and using them to treat diseases, preferably cardiovascular diseases are also provided.

RE.CNT 8

RE

- (1) Armentano, D; WO 9822609 A 1998 CAPLUS
- (2) Fallaux, F; HUM GENE THER 1998, V9, P1909 CAPLUS
- (3) Gall, J; J VIROL 1996, V70(4), P2116 CAPLUS
- (4) Genvec Inc; WO 9720051 A 1997 CAPLUS
- (5) Karayan, L; WO 9833929 A 1998 CAPLUS

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 4 SCISEARCH COPYRIGHT 2001 ISI (R)

AN 97:346968 SCISEARCH

GA The Genuine Article (R) Number: WW709

TI Human cytomegalovirus cell tropism and pathogenesis

AU Sinzger C (Reprint); Jahn G

CS UNIV TUBINGEN, ABT MED VIROL, INST HYG, CALWER STR 716, D-72076 TUBINGEN, GERMANY (Reprint)

CYA GERMANY

SO INTERVIROLOGY, (SEP-DEC 1996) Vol. 39, No. 5-6, pp. 302-319.

Publisher: KARGER, ALLSCHWILERSTRASSE 10, CH-4009 BASEL, SWITZERLAND.

ISSN: 0300-5526.

DT General Review; Journal

FS LIFE

LA English

REC Reference Count: 230

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The human cytomegalovirus (HCMV) can cause lifelong infection with episodes of endogenous reactivation. Intrauterine fetal infection and infection of immunocompromised patients are well known to result in significant morbidity. Studies on HCMV cell **tropism** in vivo revealed three characteristics: (1) ubiquitously distributed cell types such as epithelial cells, endothelial cells and fibroblasts are the major targets of HCMV infection; (2) leukocytes circulating in the peripheral blood are susceptible to the **virus**, and (3) specialized parenchymal cells such as **smooth muscle cells** in the gastrointestinal tract and hepatocytes can also be infected. Questions to be resolved are, how the **virus** spreads throughout the organism, how it can impair the function of infected organs, and how it evades the host's immune response to establish lifelong infection.

This

chapter is focused on the role of HCMV-infected target cells for the pathogenesis of HCMV-associated disease in the acutely infected immunocompromised host.

=>

=> d his

(FILE 'HOME' ENTERED AT 13:42:54 ON 19 SEP 2001)

FILE 'MEDLINE, CAPLUS, BIOSIS, SCISEARCH' ENTERED AT 13:43:05 ON 19 SEP 2001

L1 4 S TROPISM(8A) (SMOOTH(W)MUSCLE(W)CELL OR SMC)
L2 37 S TROPISM(S) (SMOOTH(W)MUSCLE(W)CELL OR SMC)
L3 1480214 S VIRUS OR ADENOVIR?
L4 28 S L2 AND L3
L5 6 S LIVER AND L4
L6 4 S CAPSID AND L4
L7 3 DUP REM L6 (1 DUPLICATE REMOVED)
L8 4 DUP REM L5 (2 DUPLICATES REMOVED)
L9 61 S ADENOVIR?(5A)SUBGROUP(W)B
L10 0 S L2 AND L9
L11 0 S ADENOVIR?(5A) (3 7 16 21 51 11 14 34 35)
L12 6860 S ADENOVIR?(5A) (3 OR 7 OR 16 OR 21 OR 51 OR 11 OR 14 OR 34 OR 3)
L13 2 S L2 AND L12
L14 2 DUP REM L13 (0 DUPLICATES REMOVED)

=> d bib ab 1-2 114

L14 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2001 ACS
AN 2000:368622 CAPLUS
DN 133:27392
TI Chimeric adenoviral vectors specific for gene transfer to smooth muscle cells, and/or endothelial cells
IN Havenga, Menzo Jans Emco; Bout, Abraham; Vogels, Ronald
PA Introgene B.V., Neth.
SO PCT Int. Appl., 91 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000031285	A1	20000602	WO 1999-NL717	19991122
	W:				
	AM, AZ, BA, BB, BG, BR, BY, CA, CN, CR, CU, CZ, DM, GD, GE, GH, GM, HR, HU, ID, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, MA, MD, MG, MN, MW, PL, RU, SD, SG, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW:				
	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	NO 9905697	A	20000522	NO 1999-5697	19991119
	EP 1020529	A2	20000719	EP 1999-203878	19991119
	EP 1020529	A3	20000816		
	R:				
	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	AU 9959600	A1	20000525	AU 1999-59600	19991122
	JP 2000157289	A2	20000613	JP 1999-332033	19991122
PRAI	EP 1998-203921	A	19981120		
AB	The invention provides chimeric adenoviral vectors with tissue tropism of smooth muscle cells, and/or endothelial cells (but not of liver cells) used for gene transfer in gene therapy. The chimeric adenoviral vectors is constructed by switching the functional part (fiber protein subunit) of adenoviral capsid				

protein in adenovirus type 5 vector to that of a subgroup B adenovirus, preferably adenovirus 16 (Ad16). The biodistribution of these chimeric vector after i.v. tail vein injection of rats and and their display differences in the endothelial and smooth muscle cell transduction are detd. The infection efficiency of Ad5 vector to smooth muscle cells, and/or endothelial cells can be increased significantly by changing the fiber subunit (esp. shaft and knob parts) of capsid protein to that of Ad16. In this way, the host immune response to recombinant viruses derived from the chimeric adenovirus vectors are greatly reduced. The contribution of cellular receptors such as CAR (Coxsackievirus and adenovirus receptor) or integrin to viral infection is also studied. Methods of prepg. various chimeric adenovirus vectors and using them to treat diseases, preferably cardiovascular diseases are also provided.

RE.CNT 8

RE

- (1) Armentano, D; WO 9822609 A 1998 CAPLUS
 - (2) Fallaux, F; HUM GENE THER 1998, V9, P1909 CAPLUS
 - (3) Gall, J; J VIROL 1996, V70(4), P2116 CAPLUS
 - (4) Genvec Inc; WO 9720051 A 1997 CAPLUS
 - (5) Karayan, L; WO 9833929 A 1998 CAPLUS
- ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 2 OF 2 MEDLINE

AN 2000132364 MEDLINE

DN 20132364 PubMed ID: 10668880

TI Optimizing cardiovascular gene therapy: increased vascular gene transfer with modified adenoviral vectors.

AU Kibbe M R; Murdock A; Wickham T; Lizonova A; Kovesdi I; Nie S; Shears L; Billiar T R; Tzeng E

CS Department of Surgery, University of Pittsburgh, PA 15261, USA.. kibbemr@msx.upmc.edu

NC R29-HL-57854 (NHLBI)

SO ARCHIVES OF SURGERY, (2000 Feb) 135 (2) 191-7.

Journal code: 8IA; 9716528. ISSN: 0004-0010.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Abridged Index Medicus Journals; Priority Journals

EM 200003

ED Entered STN: 20000320

Last Updated on STN: 20000320

Entered Medline: 20000309

AB BACKGROUND: Adenovirus is widely used as a vector for gene transfer to the

vasculature. However, the efficiency of these vectors can be limited by ineffective viral-target cell interactions. Viral attachment, which largely determines adenoviral tropism, is mediated through binding of the adenoviral fiber coat protein to the Coxsackievirus and adenovirus receptor, while internalization follows binding of the adenoviral RGD motif to alpha(v)-integrin receptors. Modifications of the fiber coat protein sequence have been successful for targeting the adenovirus to more prevalent receptors in the vasculature, including heparan sulfate-containing receptors and alpha(v)-integrin receptors. HYPOTHESIS: Modified adenoviral vectors targeted to receptors more

prevalent in the vasculature result in an increased transfer efficiency of the virus in vitro and in vivo even in the presence of clinically relevant doses of heparin. DESIGN: We tested 2 modified E1- and E3-deleted Ad5 type adenoviral vectors containing the beta-galactosidase gene. AdZ.F(pK7) contains multiple positively charged lysines in the fiber coat protein that target the adenovirus to heparan sulfate receptors, while AdZ.F(RGD) contains an RGD integrin-binding sequence in the fiber coat protein that allows binding to alpha(v)-integrin receptors. The gene transfer efficiency of these modified viruses was compared in rat aortic **smooth muscle cells** in vitro and in an in vivo porcine model of balloon-induced arterial injury. Because of the use of heparin during most vascular surgical procedures and the concern that heparin might interfere with the binding of AdZ.F(pK7) to heparan sulfate receptors, the effect of heparin on the in vitro and in vivo transfer efficiency of these 2 modified adenoviruses was evaluated. RESULTS: In vitro infection of rat aortic **smooth muscle cells** with AdZ.F(pK7) and AdZ.F(RGD) resulted in significantly higher levels of beta-galactosidase expression compared with the unmodified **adenovirus** (mean +/- SEM, 1766.3 +/- 89.1 and 44.8 +/- 3.4 vs 10.1 +/- 0.7 mU per milligram of protein; P<.001). Following heparin administration, the gene transfer efficiency achieved with AdZ.F(pK7) diminished slightly in a concentration-dependent manner. However, the transfer efficiency was still greater than with the unmodified virus (mean +/- SEM, 1342.3 +/- 101.8 vs 4.8 +/- 0.4 mU per milligram of protein; P<.001). In vivo, following injury to the pig iliac artery with a 4F Fogarty balloon catheter, we found that AdZ.F(pK7) transduced the artery approximately 35-fold more efficiently than AdZ.F and 3-fold more efficiently than AdZ.F(RGD) following the administration of intravenous heparin, 100 U/kg body weight, and heparinized saline irrigation. CONCLUSIONS: Modifications of the adenovirus that lead to receptor targeting resulted in significantly improved gene transfer efficiencies. These improvements in transfer efficiencies observed with the modified vectors decreased slightly in the presence of heparin. However, AdZ.F(pK7) was still superior to AdZ.F(RGD) and AdZ.F despite heparin administration. These data demonstrate that modifications of adenoviral vectors that enhance binding to heparan sulfate receptors significantly improve gene transfer efficiency even in the presence of heparin and suggest an approach to optimize gene transfer into blood vessels.

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